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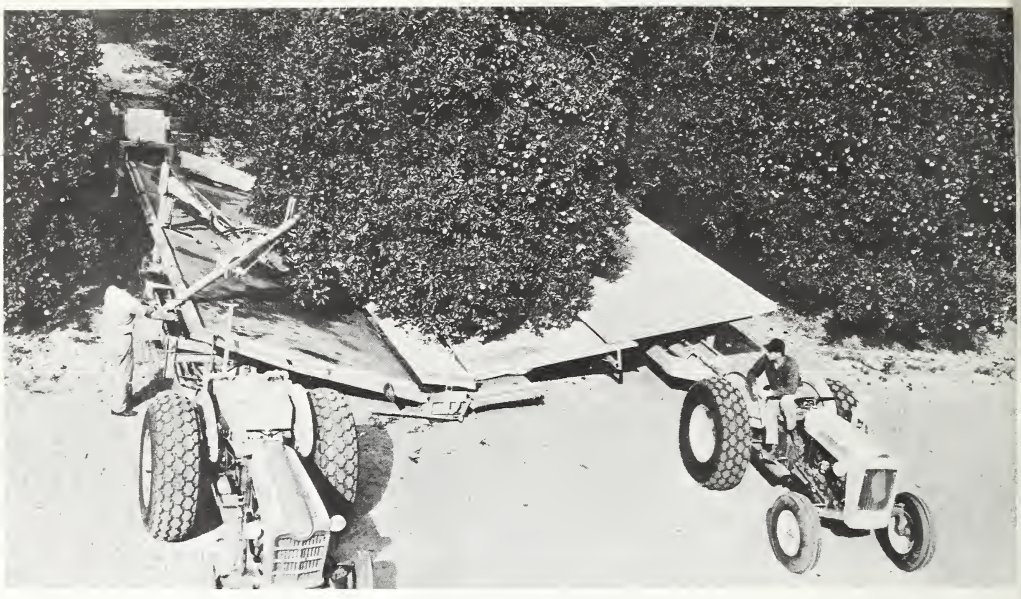
IN THE MACHINE AGE



FRUITS AND VEGETABLES

IN THE MACHINE AGE

More of America's fruit and vegetable crops are moving into the machine age. But the future is much brighter for vegetables than for fruits.

Giving farmers impetus to switch over to machines are rapidly rising labor costs. In the past two decades both hand labor and machinery have gone up in price. But labor's cost has climbed about 50 percent faster since 1950. If this sort of price relationship persists to 1975, harvesting machinery too expensive in terms of today's labor costs may well become relatively cheap tomorrow.

By 1975, three-fourths of the U.S. vegetable crop probably will be machine harvested. That compares with a bit more than half today. Practically all the Nation's snap bean crop, all the peas, carrots, and potatoes will be plucked mechanically, along with much of the tomato, lettuce, cucumber, and onion crops. In fact, only fresh tomato harvesting will be less than halfway mechanized by 1975.

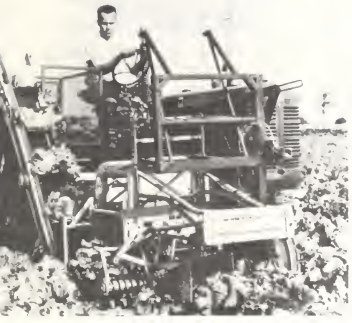
As for fruits and nuts, the 2 percent now being machine picked should be up to 17 percent in 1975. There'll be further mechanization in tart cherry production—which is already about 50 percent complete. And there should be big gains too in sweet cherries, wine grapes, and cling peaches.

The machines' coming isn't going to mean a big cutback in fruit and vegetable labor needs, however. The reason: A big gain in production is likely by 1975—and most of that gain will be in fruits and nuts where mechanization will still be slight.

Farmers 5 years hence probably will be harvesting about a fourth more fruits and nuts than they do nowadays. And while they won't need as much harvest labor—machines will have cut their needs about 23 percent per acre—some preharvest chores will still be hand done and time consuming. Thus, total labor going into an acre of fruits and vegetables will be down only about 19 percent.

With crop production slated to go up a fourth and output per man-hour to rise only about a fifth, the total amount of labor going into fruits and

Cover: Tomato harvester, top, and tart cherry shaker, bottom.
Opposite: Citrus catching machine shakes fruit from trees, catches it, and conveys it to basket.



Above: The drivers of these snap bean harvesters are in radio contact with the cannery so just the right number of beans will be picked to keep up with the canning operation.
Left: This lettuce harvester has mechanical fingers which feel each head. Only if the head is mature is a signal sent to the knife to cut the head and lift it onto the elevator.

nuts in 1975 will probably be close to what it is today.

Harvesting may take 8 percent fewer man-hours—229 million compared with 249 million today. However, total labor for all fruits and nuts, including all preharvest work, could drop only 3 percent by 1975—from 418 million to 414 million hours.

Only cherries and grapes will need a lot less labor then than now—though there may be some slight cutbacks in strawberries and pecans, too.

But citrus crops will call for more work in the years ahead. Output of oranges, for example, is slated to rise 41 percent. But there'll be only a moderate improvement in output per man-hour. Thus, tomorrow's larger crop will take 24 percent more man-hours to produce. And it'll be just about the same story for other citrus crops, too.

Vegetables, in contrast, will be easier to harvest. In the next 5 years, mechanization will have cut the amount of harvest labor per acre almost in half. And even though preharvest work won't be as completely mechanized, total labor going into an acre of vegetables will be about a third less than today.

With an expected 11 percent increase in the production of vegetables over the next couple of years, man-hours for harvest will fall off 40 percent—from 163 million to 98 million. And total labor needs will go from 265 million hours to 194 million hours, about a 27 percent decline.

Unskilled and migrant job holders will most likely be jolted by the unequal changes in fruit and vegetable labor requirements.

Some workers—those who work on snap beans, for example—are going to find themselves out of jobs as the pace of mechanization picks up in the next 5 years. Citrus producers, though, will need more help, even with more machine power.

Eventually, however, adoption of the new technology is going to mean a smaller, more stable, better paid, and more highly skilled work force in fruit and vegetable production.

WHAT'S HAPPENING TO LIVESTOCK NUMBERS?

SRS's start of the year livestock and poultry inventory said three things to farmers:

—The beef herd has the potential for expansion in cattle feeding.

—A smaller supply of hogs means fewer in the market place.

—The increase in the laying flock means more eggs in 1970.

An accounting shows livestock and poultry value totaled $23.5 billion, an increase of 16 percent over last year's figure for a new top.

Cattle represented the lion's share of the livestock value: On January 1 the Nation's 112.3 million cattle and calves were worth $20.2 billion.

The 1969 cattle story held few surprises: Beef cattle numbers continued to increase; dairy numbers decreased. One interesting element was the rate of increase for beef cattle.

During 1967 beef cattle numbers rose by 1.2 million head, and in 1968 the total was up another 1.4 million. During 1969 the burgeoning beef herd rose 3 percent, or about 2.9 million, for a grand total of over 91 million.

The interesting part is that both the number of cattle on feed and the supply of young cattle that could be placed on feed were significantly above a year earlier.

The inventory showed that 13.2 million cattle were on feed in 39 states—up 6 percent from a year earlier.

Beef calves, and heifers 1 to 2 years old were both 4 percent above last year. Beef steers were up 2 percent. Thus, the supply of young cattle that could be placed on feed, or go into the breeding herd, was about 900,000 above the beginning inventory a year ago.

Contrasting with beef cows, milk cow numbers declined for the sixteenth straight year and are now at their lowest level since 1886. The current inventory found milk cattle numbers at 21.2 million, 2 percent under a year earlier.

The number of hogs and pigs across the country was 56.7 million, down 6 percent from a year earlier. (Hog numbers here are as of December 1, 1969.) Iowa, which accounts for a quarter of the national total, was off 12 percent from a year earlier.

Sheep and lamb numbers continued the downtrend that has lasted for the last quarter of a century. The current inventory showed 20.4 million head, 4 percent fewer than at the beginning of 1969. Sheep numbers are now lowest since USDA started keeping count in 1867.

On January 1, 1970, the number of chickens on farms totaled 431.5 million, up 3 percent from a year earlier.

Hens and pullets of laying age were up 3 percent, so it looks like higher egg production is in sight for 1970.

Turkeys totaled 6.7 million (excluding fryers), 1 percent more than a year earlier. The breeder flock is up 3 percent, indicating turkey production might increase this year.

outlook

Digested from outlook reports of the Economic Research Service.
Forecasts based on information available through March 1, 1970

FOOD SUPPLIES foreseen for 1970 show a slight per capita gain in consumption over last year. In the weeks and months ahead, it looks as if we'll be eating . . . substantially more poultry and processed fruits . . . moderately more eggs and fish . . . about as much red meat and edible fats and oils . . . but less dairy products.

●

RED MEAT CONSUMPTION . . . Bigger U.S. beef production and consumption probably will be just about offset by what happens to other red meats during the year. Veal and lamb are still trending downward. And pork production's slated to be under 1969 through the first half, then increase. Result: total red meat use probably won't show much change from 1969's 182 pounds per person.

●

HOG SUPPLIES are down in first half '70—result of 7 percent cut in last fall's pig crop. But a production pickup is underway. Outlook is for a 3-percent boost in spring farrowings for second-half markets. That'll mean summer slaughter around last year's level—and fall slaughter that's moderately higher.

●

HOG PRICES are firm . . . could even set records for sustained high levels this spring. January prices for barrows and gilts (eight markets) averaged $27-plus per 100 pounds . . . a level that could hold into spring when prices rise seasonally.

●

HOG/CORN PRICE RATIO so far is the most favorable on record—averaging about 22.5 in January compared with 17.1 a year earlier (Chicago basis). Corn prices, slated to rise in the first half, still won't match hog price gains. Hog producers should again end up with a favorable price situation.

FEEDER PIG MARKET is unusually lively, with strong prices to continue through 1970's first half. January prices for 40–60 pound number 1's and 2's averaged nearly $26.50 per head in Illinois—$10 more than a year earlier. Some other markets saw prices almost double those of early 1969.

●

TRADING IN FEEDER PIGS has been picking up of late, as more Corn Belt farmers buy feeders for all or part of their slaughter hog production. This way they can cut back or eliminate the maintenance and care of sows and facilities.

●

BROILER BOOST seems likely in 1970. There's a bigger hatchery supply flock this year than last. Expansion over 1969 could be as great as 10 percent for the year . . . 13 percent for the first quarter.

●

BROILER PRICES so far this year have averaged near year-earlier levels. But for the rest of the year, they'll likely be below 1969 as broiler meat supplies continue record-large and supplies of red meat increase, particularly in the second half.

●

EGG PRODUCTION will stay ahead of 1969 throughout the year. In the first half . . . a larger, more productive laying flock should add up to around a 3 percent output gain. In the second half . . . output increase could be even bigger if chick hatch stays high and farmers don't step up culling of old flocks.

●

EGG PRICES, highest since the early fifties at the start of this winter, have dropped significantly in recent weeks . . . and will show some further decline into spring as production increases seasonally. Hatcheries will use some of the eggs to boost their output of broiler chicks and there's also a strong demand for breaking eggs. Result: shell egg supplies for table use won't change too much during first half . . . and prices should remain above year earlier levels as rising consumer incomes and high red meat prices bolster egg demand.

●

MILK PRODUCTION may change little this year . . . but per capita dairy product use will dip. Last year saw a 2 percent drop in per person milk usage . . . with biggest cuts occurring in butter, whole milk, cream, and evaporated milk products. Up were low-fat fluid milk, cheese, and cottage cheese. Retail dairy product prices probably will climb again in 1970 . . . close to 1969's 3 percent gain.

RICE EXPORTS, running 18 percent ahead of a year ago through December, probably won't maintain this pace in remainder of 1969/70. Many overseas rice buyers have large stocks . . . and . . . this year's world crop looks to be record large, meaning stiffer competition for U.S. traders. First estimates put the global crop 5 percent bigger than last year's record high—the third consecutive year of production expansion.

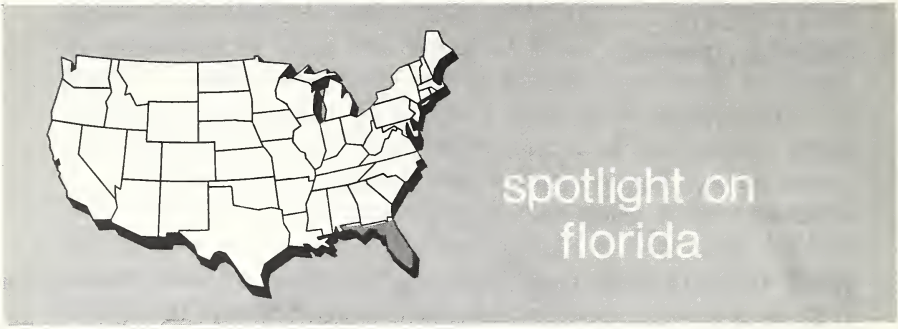
●

WOOL OUTPUT won't match last year's because of fewer sheep. U.S. stock sheep and lambs January 1 were 4 percent fewer than year before. Mill use of raw apparel wool will likely be down from 1969 during first half, but a strong second half may lift the year's total close to 1969. U.S. shorn wool prices in 1970 probably will average under last year's, reflecting weakness in world pool prices.

STATISTICAL BAROMETER

Item	1957–59 average	1969	Latest data available	
Farm output, total	100	121	121	Dec. 1969
Crops	100	121	121	Dec. 1969
Livestock	100	118	118	Dec. 1969
Prices received by farmers	100	114	120	Feb. 1970
Prices paid, interest, taxes, wage rates	100	121	132	Feb. 1970
Parity ratio (1910–14=100)	—	74	75	Feb. 1970
Livestock and poultry on farms	100	114	[2] 115	Jan. 1970
Meat animals	100	114	[2] 115	Jan. 1970
Milk cattle	100	67	[2] 66	Jan. 1970
Poultry	100	110	[2] 112	Jan. 1970
Consumer price index, all items	110	128	132	Jan. 1970
Food	100	126	132	Jan. 1970
Personal income ($ bil.)	321.5	629.7	[3] 647.5	Jan. 1970
Expenditures for food ($ bil.)	66.3	103.6	[3] 105.2	Jan. 1970
Percent income spent for food	20.6	16.5	16.2	Jan. 1970
Farm food market basket:[1]				
Retail cost ($)	983	[2] 1,173	[2] 1,223	Jan. 1970
Farm value ($)	388	[2] 477	[2] 498	Jan. 1970
Farmers' share of retail cost, percent	39	[2] 41	[2] 41	Jan. 1970
Realized gross farm income ($ bil.)	36.5	54.6	[3] 55.1	
Production expenses ($ bil.)	24.9	38.6	[3] 38.9	
Realized net farm income ($ bil.)	11.6	16.0	[3] 16.2	

[1] Average quantities per family and single person household bought by wage and clerical workers 1960–61 based on BLS figures.
[2] Preliminary.
[3] Annual rate, seasonally adjusted fourth quarter.



Four days of freezing temperatures in January and Joe Mullin and his citrus forecasters were out on a limb.

Mullin is the statistician in charge of the Florida Crop and Livestock Reporting Service at Orlando. One of his citrus statisticians' biggest jobs is checking on the progress of the State's billion dollar citrus crop. And every freeze that could be damaging calls for a careful recheck.

Early in February, Florida's citrus fruit forecasters revisited a number of sample groves they'd been keeping watch over since August. Their first job was to pick and cut open a batch of fruit to see what damage, if any, showed on the insides.

The cut check revealed no damage at all to nearly half the early and midseason orange crop and 70 percent of the Valencias. Major damage showed up in only 5 percent of the early and midseason varieties and 1 percent of the Valencias.

But it was still too soon for Florida's citrus forecasters to breathe easy. There was one more freeze damage test to

The amount of fruit on a tree is estimated by counting the fruit on a sample branch. Each branch is counted twice by different people to make sure the total is exact.

Here an airphoto interpreter determines citrus acreage and tree numbers. New airphotos of Florida's groveland are taken every two years so forecasters know every acre that goes in or out of citrus production.

Calipers show how big this orange is at its circumference. Fruit size makes a big difference in the size of the total crop.

run—a check on the yields of juice and solids. But after the sample oranges had been run through a juice extractor and yields averaged well above last year's, Florida statisticians agreed the crop had been spared serious loss.

Forecasting the size of the Florida citrus crop starts in August of each year when fruit counts are made throughout the State. This totals up the number of fruit on sample limbs of several thousand trees. The technique is called objective yield measuring and from it, experts can forecast the total fruit on the trees, and from that, total State production.

Each month afterwards, statisticians working in teams revisit the sample trees and measure the size of the fruit—crucial in determining the size of the total crop. The bigger the fruit, the fewer it takes to fill a box and the more boxes in the total crop.

And there's also a season-long watch kept on "drop"—the number of fruit that fall off the trees after the original limb counts are made in August.

Most funds for objective measuring work are provided by the Florida citrus industry and are administered cooperatively by the Florida Department of Agriculture and the Florida Crop and Livestock Reporting Service.

Florida's citrus forecasters don't come out right on the button all of the time. But after nearly 50 years of forecasting and 15 years of work developing objective measuring systems, Mullin and his men can come up with a total orange and grapefruit crop estimate that's within 6 percent of pickout 95 percent of the time.

LONG-TERM EQUIPMENT LEASING:

FOR YOU?

Can long-term equipment leasing help your financial situation as a farm operator more than owning? That depends entirely on your particular farm and your particular financial situation.

With a long-term or financial agreement, you agree to lease equipment—a tractor, silo, apple picker, etc.—for a predetermined time (generally several years) at a set cost. This could be advantageous to you if you're in a high tax bracket, use your equipment heavily, have only limited capital, or have other investment opportunities with a high return.

Here are answers to some of the most frequently asked questions about long-term leases:

● Do leases stretch limited capital?

Generally, yes. If you need additional machinery or equipment but don't have the cash for a downpayment, you can usually acquire the item you need through a lease with no money down.

Beware, though, of stretching your capital too far. Leasing does create debt obligations and lease charges need to be taken into account along with other cash needs. If your major lender feels a long-term lease strains your ability to repay, he may be less inclined to make loans for other purposes.

● Does a long-term lease increase annual cash flow?

Not always. In the year of acquisition, the lease charge will probably require less cash than a downpayment. Later, though, charges will exceed financing costs.

An operator with profitable alternative uses for his money may increase his cash flow over time, but this is not assured.

● Will a lease lower total costs?

No. Leasing machinery or equipment is more expensive than buying it outright.

Lease charges cover not only equipment costs and interest charges, but also the lessor's operating costs and his profit.

● Will a lease reduce taxes?

Yes, but unless you are in a rather high income bracket, any tax savings will be small. And the contract must meet IRS leasing specifications, or only part of the annual charge will be allowed as taxable expense.

If your lease allows a full writeoff of leasing charges, your taxes could be reduced or deferred to later years.

Leases also permit recovery of equipment cost in fewer years than depreciation. Thus, your annual charges may exceed normal depreciation and interest charges.

● Do leases reduce the risk of obsolescence?

No. Machinery can become obsolete regardless of whether you own or lease it. And a lease still binds you to an annual outlay for the period of the contract. However, writing off the cost over a shorter time may give you more flexibility.

Leasing works out best for the farm operator who has a high rate of return on his money and can free additional cash through leasing.

It also pays for the man who uses his machinery or equipment heavily. Then leasing allows him to relate tax deductible expense more closely to the useful life of an item.

If leasing looks like a route you should follow, remember: It's best to do some detailed figuring with your lender, tax consultant, or extension agent before signing any agreement.

And be sure to check both the short-run and long-run effects of the lease. The profit picture over a period of years may be quite different from that for just 1 year.

To give our readers a clearer picture of U.S. farming in all its modern diversity, Agricultural Situation presents the first in a series of farm photo-essays. These farms have been selected by USDA farm management specialists as typical of good commercial farm businesses in various production areas.

They are *not* average farms . . . they are definitely above average. But they are not showplaces either. They represent the modern farm businesses that can be readily found in their production areas, and which produce the bulk of America's farm products today.

FIRST IN A SERIES

PORTRAIT OF A FARM

The Reider Watson farm is in the heart of the Corn Belt. The deep, level soils combine with a moderately long growing season and plentiful rainfall (25 to 35 inches per year, most of it during the growing season) to make the Corn Belt one of the most productive grain belts in the world.

It is also the most highly mechanized. Watson produces 40,000–45,000 bushels of corn and 6,000–7,000 bushels of soybeans per year on 600 acres of land. Practically all of the farm labor comes from the Watson family.

Watson combines all of his crops, switching the 3-row corn head to a 14-foot small-grain head for the soybeans and for 30 acres of seed wheat he grows on contract.

A year ago, Watson switched from a moldboard plow to a chisel plow for much of his corn land, because the chisel plow takes less power and time per acre and is just as effective. He uses the chisel plow and applies liquid fertilizer in the fall, then uses a field cultivator ahead of the corn planter in the spring.

Watson owns only 80 acres, but rents 400 from a close relative and 120 from another landowner. About 75 percent of the land in his central Illinois area is leased. Leasing lets farmers expand their acreage rapidly to use the most efficient machinery, without a big land investment.

Shovels are obsolete on the Watson place. Augers and gravity move corn from field wagons to a gas-fired drying bin, and then into a waiting truck. Watson used to haul wagonloads of corn with his tractor to a local elevator 4 miles away. Now he saves time by hiring a truck to haul directly to a new subterminal elevator 25 miles away.

Shelled corn, 25 percent moisture at harvest, must be dried to 15 percent moisture for storage. Watson has 36,000 bushels of storage on his farm.

The farm home is 70 years old, but extensively remodeled. Watson's two teenage sons are active in sports and Future Farmers of America. His daughter is a member of the local 4-H Club. Watson's sons, Jeff and Jerry, and wife Wilma also help with farm operations during seasons of peak workload.

About 60 years ago, a charge of "cornering food supplies" to raise consumer prices dealt USDA statisticians a chill. A professional chill, that is. The Secretary of Agriculture ordered an investigation of the supply movement and price fluctuations of such products as butter, eggs, beef, mutton, and pork.

Investigators found that long-term cold storage was the exception rather than the normal practice. They also brought out the fact that food handlers actually lost money if food was kept too long in freezers or coolers. Storage expenses plus the original commodity cost usually added up to more than the market would bring.

Most importantly the investigation proved a need for continuing reports on the quantities of food in public storage. Regular reporting began in 1914, when 283 "apple houses" supplied information for an annual apple estimate.

Today's cold storage report is much more comprehensive. Issued at midmonth by the Statistical Reporting Service (SRS), it covers 87 commodities stored in cooling rooms (30°–50°) and subzero freezer facilities. Information comes from 3,200 firms who voluntarily return questionnaires.

The report still includes apples, with about 200 of the firms included in the 1914 survey still supplying information on apple stocks. In addition, data on national and regional stocks are reported monthly for fruits, vegetables, juices, butter, cheese, and other dairy products, poultry and eggs.

Reports generally refer only to food commodities stored over 30 days. This excludes holdings of many food chains, wholesalers, jobbers, and locker plants which usually have a fast turnover of stock.

Knowledge of cold storage stocks is important in anticipating supplies and prices. The report also gauges an important part of the Nation's reserve food supply. For this reason, response by the cold storage industry was mandatory during the world wars.

And, reports are used to plan the optimum sites for new facilities. Since centers of important fruit, vegetable, and livestock production have moved west, so have many cold storage facilities.

As the shape of the food industry changes, the report is modified. Pork holdings, once reported as a unit, are now broken out into basic cuts. Some fruit commodities are now reported by package size, rather than in bulk. And, in addition to the distribution of printed reports by SRS, news travels quickly on release day with leased wire services and USDA's Market News Services.

FREE:

JELLY RECIPES

If your family's sweet on homemade jellies, here's a free publication that will come in handy in the kitchen.

"How To Make Jellies, Jams, and Preserves at Home" is more than just a recipe book. In words and pictures it details all that goes into the preparation of high quality jellied fruit products.

For your free copy of this 30-page pamphlet, please print your name, address, and zip code on a post card and send to:
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PORK TO JAPAN

The growing Japanese appetite for meat has meant a very sharp rise in pork exports from the United States to that country.

In 1968, pressed by demand for more red meat from consumers with expanding billfolds, Japan raised its import quota for pork. What was the result?

In 1969, U.S. pork shipments to Japan leaped 11-fold to an all-time high, January–July, of 33.4 million pounds from 2.7 million pounds in those months a year earlier. Shipments to Japan accounted for over one-third of all U.S. pork exports in the first 8 months of 1969, and shipments were expected to remain high through the year.

Total U.S. meat exports were two and a half times more than they were for a like period of 1968. Pork exports alone doubled, January–August, over those months of 1968 and represented four-fifths of all red meat exports in that period.

APRIL 1970

In This Issue

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Geraldine Schumacher

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